

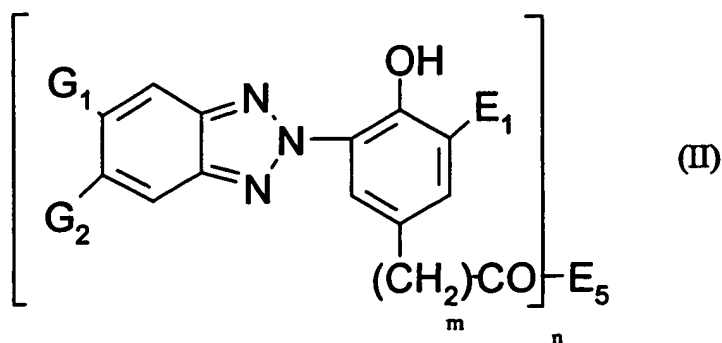
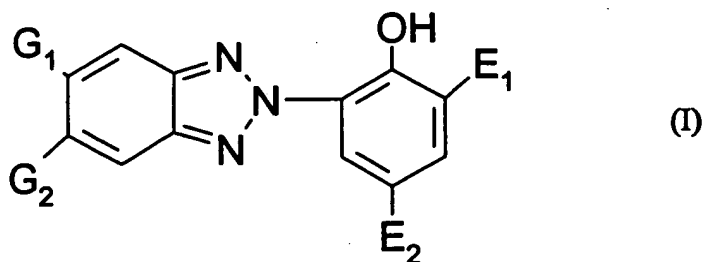
What is Claimed is:

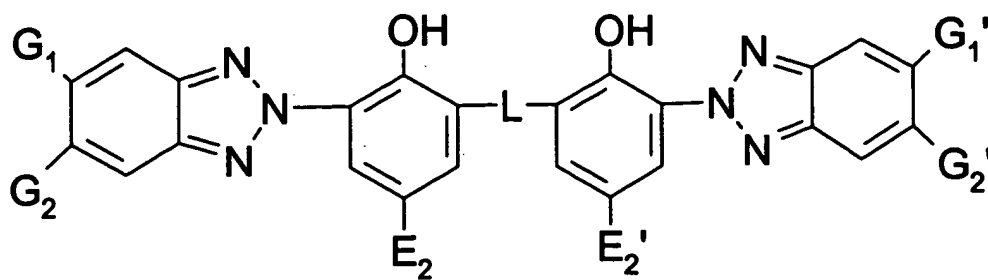
1. A plastic container or film for content storage which protects the contents therein against the deleterious effects of ultraviolet radiation which comprises

(a) a clear or lightly colored plastic, and

(b) an effective stabilizing amount of one or more compounds selected from the group consisting of durable hydroxyphenyl benzotriazole and tris-aryl-s-triazine UV absorbers.

2. A plastic container or film according to claim 1 wherein said benzotriazole UV absorbers are of formula (I), (II) or (III)





(III)

wherein

G_1 and G_1' are independently hydrogen or halogen,

G_2 and G_2' are independently halogen, nitro, cyano, perfluoroalkyl of 1 to 12 carbon atoms, $-\text{COOG}_3$, $-\text{P}(\text{O})(\text{C}_6\text{H}_5)_2$, $-\text{CO-G}_3$, $-\text{CO-NH-G}_3$, $-\text{CO-N}(\text{G}_3)_2$, $-\text{N}(\text{G}_3)-\text{CO-G}_3$, $\text{E}_3\text{SO-}$ or E_3SO_2- ; or G_2' is also hydrogen,

G_3 is hydrogen, straight or branched chain alkyl of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 4 alkyl of 1 to 4 carbon atoms,

E_1 is hydrogen, straight or branched chain alkyl of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 24 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 4 alkyl of 1 to 4 carbon atoms; or E_1 is alkyl of 1 to 24 carbon atoms substituted by one or two hydroxy groups,

when E_1 is phenylalkyl of 7 to 15 carbon atoms or phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 4 alkyl of 1 to 4 carbon atoms, G_2 may also be hydrogen,

E_2 and E_2' are independently straight or branched alkyl chain of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by one to three alkyl of 1 to 4 carbon atoms; or E_2 and E_2' are independently said alkyl of 1 to 24 carbon atoms or said alkenyl of 2 to 18 carbon atoms substituted by one or more -OH, -OCOE₁₁, -OE₄, -NCO, -NH₂, -NHCOE₁₁, -NHE₄ or -N(E₄)₂, or mixtures thereof, where E_4 is straight or branched chain alkyl of 1 to 24 carbon atoms; or said alkyl or said alkenyl interrupted by one or more -O-, -NH- or -NE₄- groups or mixtures thereof and which can be unsubstituted or substituted by one or more -OH, -OE₄ or -NH₂ groups or mixtures thereof;

n is 1 or 2,

when n is 1, E_5 is OE₆ or NE₇E₈, or

E_5 is -PO(OE₁₂)₂, -OSi(E₁₁)₃ or -OCO-E₁₁,

or straight or branched chain C₁-C₂₄alkyl which is interrupted by -O-, -S- or -NE₁₁ and which can be unsubstituted or substituted by -OH or -OCO-E₁₁, C₅-C₁₂ cycloalkyl which is unsubstituted or substituted by -OH, straight chain or branched C₂-C₁₈alkenyl which is unsubstituted or substituted by -OH, C₇-C₁₅aralkyl, -CH₂-CHOH-E₁₃ or glycidyl,

E_6 is hydrogen, straight or branched chain C₁-C₂₄alkyl which is unsubstituted or substituted by one or more OH, OE₄ or NH₂ groups, or -OE₆ is -(OCH₂CH₂)_wOH or -(OCH₂CH₂)_wOE₂₁ where w is 1 to 12 and E_{21} is alkyl of 1 to 12 carbon atoms,

E_7 and E_8 are independently hydrogen, alkyl of 1 to 18 carbon atoms, straight or branched chain C₃-C₁₈alkyl which is interrupted by -O-, -S- or -NE₁₁-, C₅-C₁₂cycloalkyl, C₆-C₁₄aryl or C₁-C₃hydroxylalkyl, or E_7 and E_8 together with the N atom are a pyrrolidine, piperidine, piperazine or morpholine ring,

E_9 is -X-(Z)_p-Y-E₁₅

wherein

X is -O- or -N(E₁₆)-,

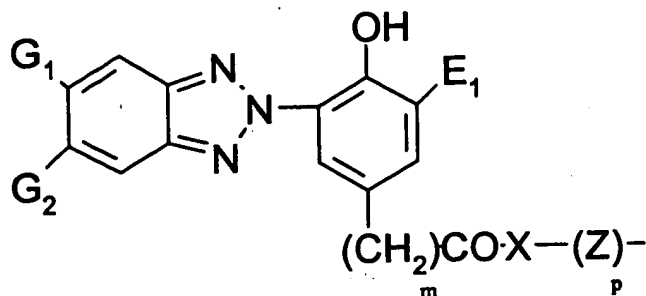
Y is -O- or -N(E₁₇)-,

Z is C₂-C₁₂-alkylene, C₄-C₁₂-alkylene interrupted by one to three nitrogen atoms, oxygen atoms or a mixture thereof, or is C₃-C₁₂-alkylene, butenylene, butynylene, cyclohexylene or phenylene, each substituted by a hydroxyl group,

m is zero, 1 or 2,

p is 1, or p is also zero when X and Y are -N(E₁₆)- and -N(E₁₇)-, respectively,

E₁₅ is a group -CO-C(E₁₈)=C(H)E₁₉ or, when Y is -N(E₁₇)-, forms together with E₁₇ a group -CO-CH=CH-CO-, wherein E₁₈ is hydrogen or methyl, and E₁₉ is hydrogen, methyl or -CO-X-E₂₀, wherein E₂₀ is hydrogen, C₁-C₁₂-alkyl or a group of the formula

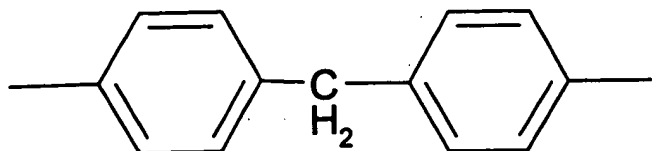


wherein the symbols E₁, G₂, X, Z, m and p have the meanings defined above, and E₁₆ and E₁₇ independently of one another are hydrogen, C₁-C₁₂-alkyl, C₃-C₁₂-alkyl interrupted by 1 to 3 oxygen atoms, or is cyclohexyl or C₇-C₁₅-alkyl, and E₁₆ together with E₁₇ in the case where Z is ethylene, also forms ethylene,

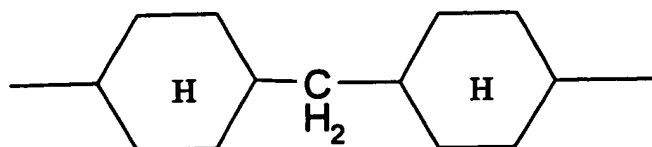
when n is 2, one of G₂ is also hydrogen, E₅ is one of divalent radicals -O-E₉-O- or -N(E₁₁)-E₁₀-N(E₁₁)-,

E₉ is C₂-C₈-alkylene, C₄-C₈-alkenylene, C₄-alkynylene, cyclohexylene, straight or branched chain C₄-C₁₀-alkylene which is interrupted by -O- or by -CH₂-CHOH-CH₂-O-E₁₄-O-CH₂-CHOH-CH₂-,

E_{10} being straight or branched chain C_2 - C_{12} alkylene which may be interrupted by -O-, cyclohexylene, or

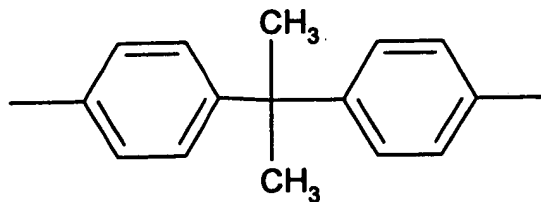


or

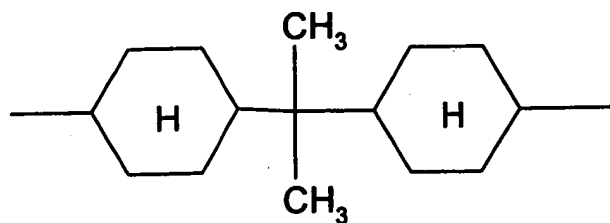


or E_{10} and E_{11} with the two nitrogen atoms form a piperazine ring,

E_{14} is straight or branched chain C_2 - C_8 alkylene, straight or branched chain C_4 - C_{10} alkylene which is interrupted by -O-, cycloalkylene, arylene or



or



where E_7 and E_8 are independently hydrogen, alkyl of 1 to 18 carbon atoms or E_7 and E_8 together are alkylene of 4 to 6 carbon atoms, 3-oxapentamethylene, 3-iminopentamethylene or 3-methyliminopentamethylene,

E_{11} is hydrogen, straight or branched chain C_1 - C_{18} alkyl, C_5 - C_{12} cycloalkyl, straight or branched chain C_2 - C_{18} alkenyl, C_6 - C_{14} aryl or C_7 - C_{15} aralkyl,

E_{12} is straight or branched chain C_1 - C_{18} alkyl, straight or branched chain C_3 - C_{18} alkenyl, C_5 - C_{10} cycloalkyl, C_6 - C_{16} aryl or C_7 - C_{15} aralkyl,

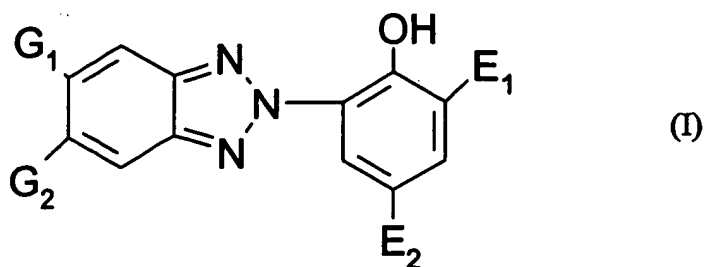
E_{13} is H, straight chain or branched C_1 - C_{18} alkyl which is substituted by $-PO(OE_{12})_2$, phenyl which is unsubstituted or substituted by OH, C_7 - C_{15} aralkyl or $-CH_2OE_{12}$,

E_3 is alkyl of 1 to 20 carbon atoms, hydroxyalkyl of 2 to 20 carbon atoms, alkyl substituted by alkoxycarbonyl of 2 to 9 carbon atoms, alkenyl of 3 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, aryl of 6 to 10 carbon atoms or said aryl substituted by one or two alkyl of 1 to 4 carbon atoms or 1,1,2,2-tetrahydroperfluoroalkyl where the perfluoroalkyl moiety is of 6 to 16 carbon atoms, and

L is alkylene of 1 to 12 carbon atoms, alkylidene of 2 to 12 carbon atoms, benzylidene, p-xylylene, $\alpha,\alpha',\alpha',\alpha'$ -tetramethyl-m-xylylene or cycloalkylidene; and

with the proviso that formula (I) does not represent 5-chloro-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole, 5-chloro-2-(2-hydroxy-3-tert-butyl-5-methylphenyl)-2H-benzotriazole or 2-(2-hydroxy-3,5-di- α -cumyl)-2H-benzotriazole.

3. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers are of formula (I)



wherein

G_1 is hydrogen,

G_2 is hydrogen, cyano, chloro, fluoro, CF_3 -, $-CO-G_3$, E_3SO - or E_3SO_2 -,

G_3 is straight or branched chain alkyl of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 4 alkyl of 1 to 4 carbon atoms,

E_1 is phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 4 alkyl of 1 to 4 carbon atoms,

E_2 is straight or branched alkyl chain of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 3 alkyl of 1 to 4 carbon atoms; or E_2 is said alkyl of 1 to 24 carbon atoms or said alkenyl of 2 to 18 carbon atoms substituted by one or more $-OH$, $-OCOE_{11}$, $-OE_4$, $-NCO$, $-NH_2$, $-NHCOE_{11}$, $-NHE_4$, or $-N(E_4)_2$, or mixtures thereof, where E_4 is straight or branched chain alkyl of 1 to 24 carbon atoms; or said alkyl or said alkenyl interrupted by one or more $-O$ -, $-NH$ - or $-NE_4$ - groups or mixtures thereof and which can be unsubstituted or substituted by one or more $-OH$, $-OE_4$ or $-NH_2$ groups or mixtures thereof;

E_3 is alkyl of 1 to 20 carbon atoms, hydroxyalkyl of 2 to 20 carbon atoms, alkenyl of 3 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, aryl of 6 to 10 carbon atoms or said aryl substituted by one or two alkyl of 1 to 4 carbon atoms or 1,1,2,2-tetrahydroperfluoroalkyl where the perfluoroalkyl moiety is of 6 to 16 carbon atoms;

or is a compound of formula (I)

wherein,

G_1 is hydrogen,

G_2 is chloro, fluoro, CF_3 -, E_3SO - or E_3SO_2 -,

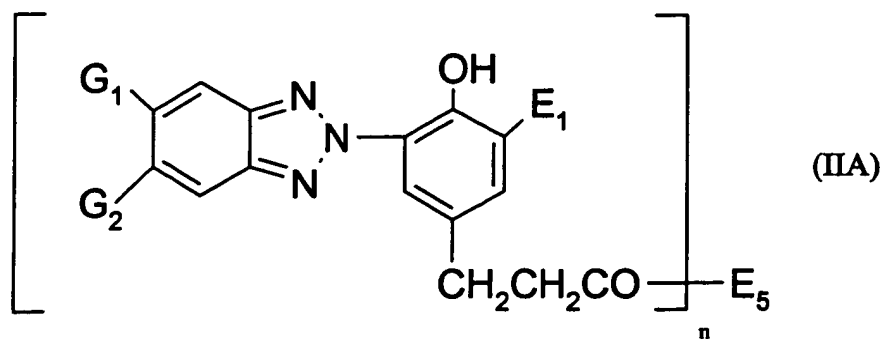
E_1 is hydrogen or straight or branched alkyl of 1 to 24 carbon atoms,

E_2 is as defined above, and

E_3 is straight or branched chain alkyl of 1 to 7 carbon atoms; and

with the proviso that formula (I) does not represent 5-chloro-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole, 5-chloro-2-(2-hydroxy-3-tert-butyl-5-methylphenyl)-2H-benzotriazole or 2-(2-hydroxy-3,5-di- α -cumyl)-2H-benzotriazole.

4. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers of formula (II) are of the formula (IIA)



wherein

G_1 is hydrogen,

G_2 is CF_3 - or fluoro,

E_1 is hydrogen, straight or branched alkyl of 1 to 24 carbon atoms or phenylalkyl of 7 to 15 carbon atoms,

when E_1 is phenylalkyl of 7 to 15 carbon atoms, G_2 may also be hydrogen,

E_5 is $-OE_6$ or $-NE_7E_8$, or

E_5 is

$-X-(Z)_p-Y-E_{15}$

wherein

X is $-O-$ or $-N(E_{16})-$,

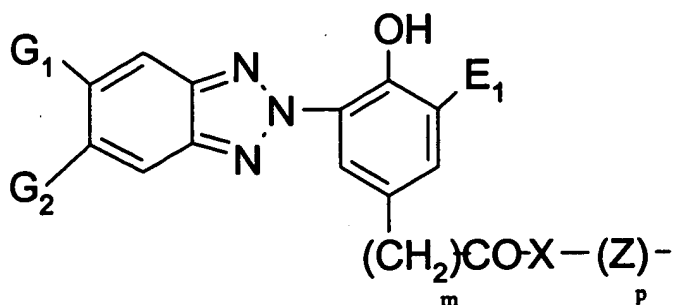
Y is $-O-$ or $-N(E_{17})-$,

Z is C_2 - C_{12} -alkylene, C_4 - C_{12} -alkylene interrupted by one to three nitrogen atoms, oxygen atoms or a mixture thereof, or is C_3 - C_{12} -alkylene, butenylene, butynylene, cyclohexylene or phenylene, each substituted by a hydroxyl group,

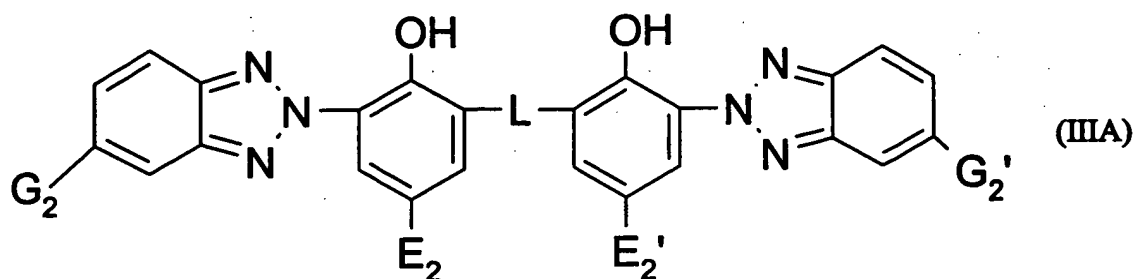
m is 0, 1, 2 or 3,

p is 1, or p is also zero when X and Y are $-N(E_{16})-$ and $-N(E_{17})-$, respectively,

E_{15} is a group $-CO-C(E_{18})=C(H)E_{19}$, or, when Y is $-N(E_{17})-$, forms together with E_{17} a group $-CO-CH=CH-CO-$, wherein E_{18} is hydrogen or methyl, and E_{19} is hydrogen, methyl or $-CO-X-E_{20}$, wherein E_{20} is hydrogen, C_1 - C_{12} -alkyl or a group of the formula



5. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers are of formula (III) are of the formula (IIIA)



wherein

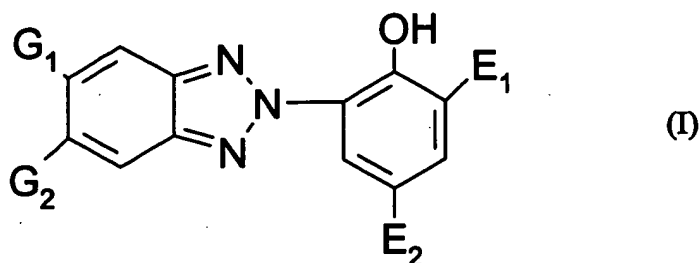
G_2 is CF_3 ,

G_2 is hydrogen or CF_3 ,

E_2 and E_2' are independently straight or branched alkyl chain of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 3 alkyl of 1 to 4 carbon atoms; and

L is alkylene of 1 to 12 carbon atoms, alkylidene of 2 to 12 carbon atoms, benzyldiene, p-xylylene, $\alpha,\alpha,\alpha',\alpha'$ -tetramethyl-m-xylylene or cycloalkylidene.

6. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers are of formula (I)



wherein

G_1 is hydrogen,

G_2 is CF_3 -,

E_1 is phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 4 alkyl of 1 to 4 carbon atoms,

E_2 is straight or branched alkyl chain of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 3 alkyl of 1 to 4 carbon atoms; or E_2 is said alkyl of 1 to 24 carbon atoms or said alkenyl of 2 to 18 carbon atoms substituted by one or more -OH, - $OCOE_{11}$, - NH_2 or - $NHCOE_{11}$, or mixtures

thereof, or said alkyl or said alkenyl interrupted by one or more -O- and which can be unsubstituted or substituted by one or more -OH,

or is a compound of formula (I) wherein,

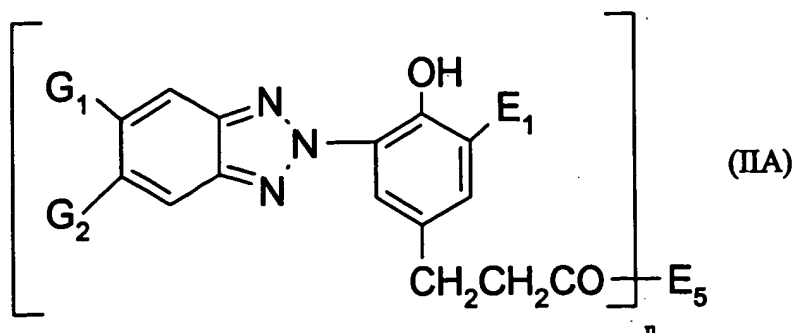
G₁ is hydrogen,

G₂ is CF₃-,

E₁ is hydrogen, straight or branched alkyl of 4 to 24 carbon atoms or phenylalkyl of 7 to 15 carbon atoms, and

E₂ is straight or branched alkyl chain of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 3 alkyl of 1 to 4 carbon atoms; or E₂ is said alkyl of 1 to 24 carbon atoms or said alkenyl of 2 to 18 carbon atoms substituted by one or more -OH, -OCOE₁₁, -NH₂ or -NHCOE₁₁, or mixtures thereof, or said alkyl or said alkenyl interrupted by one or more -O- and which can be unsubstituted or substituted by one or more -OH.

7. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers of formula (II) are of the formula (IIA)



wherein

G_1 is hydrogen,

G_2 is CF_3 -,

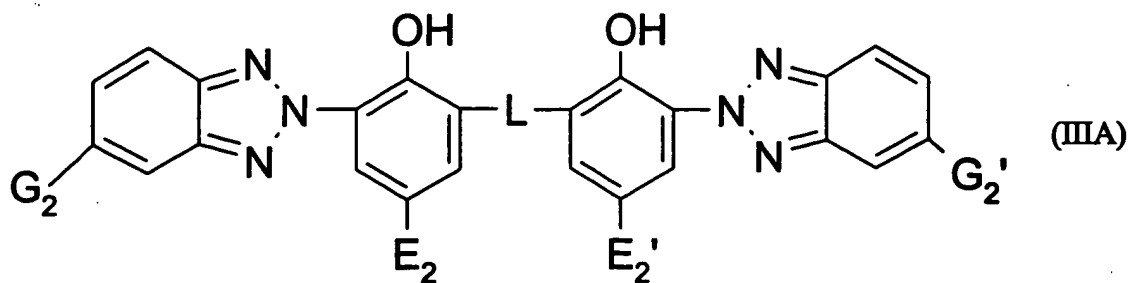
E_1 is hydrogen, straight or branched alkyl of 4 to 24 carbon atoms or phenylalkyl of 7 to 15 carbon atoms,

E_5 is $-OE_6$ or $-NE_7E_8$ where

E_6 is hydrogen, straight or branched chain C_1 - C_{24} alkyl which is unsubstituted or substituted by one or more OH groups, or $-OE_6$ is $-(OCH_2CH_2)_wOH$ or $-(OCH_2CH_2)_wOE_{21}$ where w is 1 to 12 and E_{21} is alkyl of 1 to 12 carbon atoms, and

E_7 and E_8 are independently hydrogen, alkyl of 1 to 18 carbon atoms, straight or branched chain C_3 - C_{18} alkyl which is interrupted by $-O$ -, $-S$ - or $-NE_{11}$ -, C_5 - C_{12} cycloalkyl, C_6 - C_{14} aryl or C_1 - C_3 hydroxylalkyl, or E_7 and E_8 together with the N atom are a pyrrolidine, piperidine, piperazine or morpholine ring.

8. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers of formula (III) are of the formula (IIIA)



wherein

G_2 is CF_3 ,

G_2' is hydrogen or CF_3 ,

E_2 and E_2' are independently straight or branched alkyl chain of 1 to 24 carbon atoms, straight or branched chain alkenyl of 2 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, phenyl, or said phenyl or said phenylalkyl substituted on the phenyl ring by 1 to 3 alkyl of 1 to 4 carbon atoms; and

L is methylene.

9. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers are selected from the group consisting of

- (a) 5-trifluoromethyl-2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
- (b) 5-trifluoromethyl-2-(2-hydroxy-5-tert-octylphenyl)-2H-benzotriazole;
- (c) 5-trifluoromethyl-2-(2-hydroxy-3,5-di-tert-octylphenyl)-2H-benzotriazole;
- (d) 2,2'-methylene-bis[6-(5-trifluoromethyl-2H-benzotriazol-2-yl)-4-tert-octylphenol];

- (e) methylene-2-[4-tert-octyl-6-(2H-benzotriazol-2-yl)phenol]2'-[4-tert-butyl-6-(5-trifluoromethyl-2H-benzotriazol-2-yl)phenol];
- (f) 3-(5-trifluoromethyl-2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyhydrocinnamic acid;
- (g) methyl 3-(5-trifluoromethyl-2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyhydrocinnamate;
- (h) isooctyl 3-(5-trifluoromethyl-2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyhydrocinnamate;
- (i) 5-trifluoromethyl-2-[2-hydroxy-5-(3-hydroxypropyl)phenyl]-2H-benzotriazole;
- (j) 5-butylsulfonyl-2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
- (k) 5-octylsulfonyl-2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
- (l) 5-dodecylsulfonyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
- (m) 5-octylsulfonyl-2-(2-hydroxy-3,5-di-tert-octylphenyl)-2H-benzotriazole;
- (n) 5-trifluoromethyl-2-(2-hydroxy-3- α -cumyl-5-tert-butylphenyl)-2H-benzotriazole;
- (o) 5-trifluoromethyl-2-(2-hydroxy-3- α -cumyl-5-nonylphenyl)-2H-benzotriazole;
- (p) 5-trifluoromethyl-2-[2-hydroxy-3- α -cumyl-5-(2-hydroxyethyl)phenyl]-2H-benzotriazole;
- (q) 5-trifluoromethyl-2-[2-hydroxy-3- α -cumyl-5-(3-hydroxypropyl)phenyl]-2H-benzotriazole;
- (r) 5-trifluoromethyl-2-(2-hydroxy-3,5-di-tert-amylphenyl)-2H-benzotriazole;
- (s) 5-trifluoromethyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
- (t) 5-trifluoromethyl-2-(2-hydroxy-3-dodecyl-5-methylphenyl)-2H-benzotriazole;
- (u) 5-trifluoromethyl-2-[2-hydroxy-3-tert-butyl-5-(3-hydroxypropyl)phenyl]-2H-benzotriazole;
- (v) 5-trifluoromethyl-2-[2-hydroxy-3-tert-butyl-5-(2-hydroxyethyl)phenyl]-2H-benzotriazole;
- (w) 5-trifluoromethyl-2-[2-hydroxy-5-(2-hydroxyethyl)phenyl]-2H-benzotriazole;
- (x) 5-trifluoromethyl-2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
- (y) 5-fluoro-2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
- (z) 5-butylsulfonyl-2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;

- (aa) 5-butylsulfonyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
- (bb) 5-butylsulfonyl-2-(2-hydroxy-3,5-di-tert-octylphenyl)-2H-benzotriazole;
- (cc) 5-phenylsulfonyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
- (dd) 5-chloro-2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
- (ee) 5-chloro-2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
- (ff) isooctyl 3-(5-chloro-2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyhydrocinnamate;

and

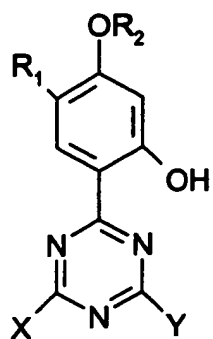
- (gg) 2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole.

10. A plastic container or film according to claim 2 wherein said benzotriazole UV absorbers are selected from the group consisting of

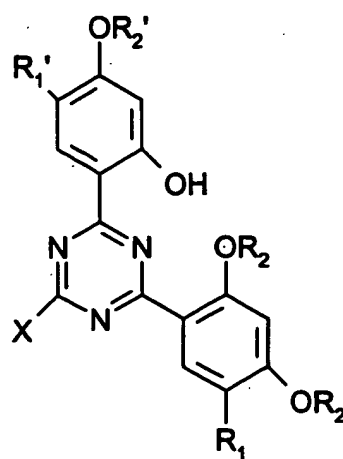
- (a) 5-trifluoromethyl-2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
- (b) 5-trifluoromethyl-2-(2-hydroxy-5-tert-octylphenyl)-2H-benzotriazole;
- (c) 5-trifluoromethyl-2-(2-hydroxy-3,5-di-tert-octylphenyl)-2H-benzotriazole;
- (g) methyl 3-(5-trifluoromethyl-2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyhydrocinnamate;

- (j) 5-butylsulfonyl-2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
- (n) 5-trifluoromethyl-2-(2-hydroxy-3- α -cumyl-5-tert-butylphenyl)-2H-benzotriazole;
- (s) 5-trifluoromethyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
- (x) 5-trifluoromethyl-2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
- (aa) 5-butylsulfonyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole; and
- (cc) 5-phenylsulfonyl-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole.

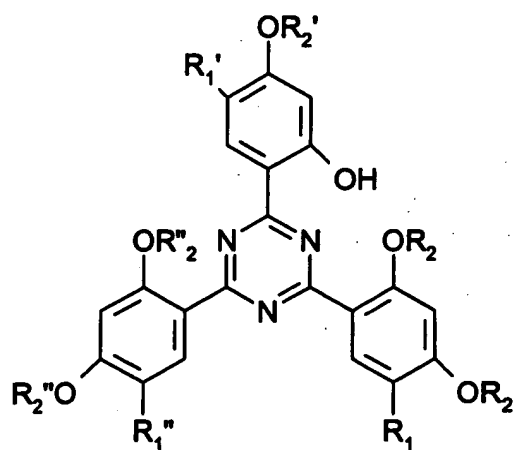
11. A plastic container or film according to claim 1 wherein said tris-aryl-s-triazine UV absorbers are of formula (IV), (V), (VI), (VII), (VIII) or (IX)



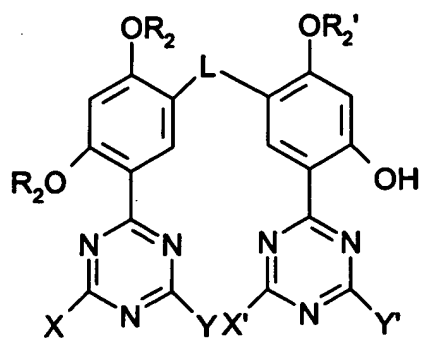
(IV)



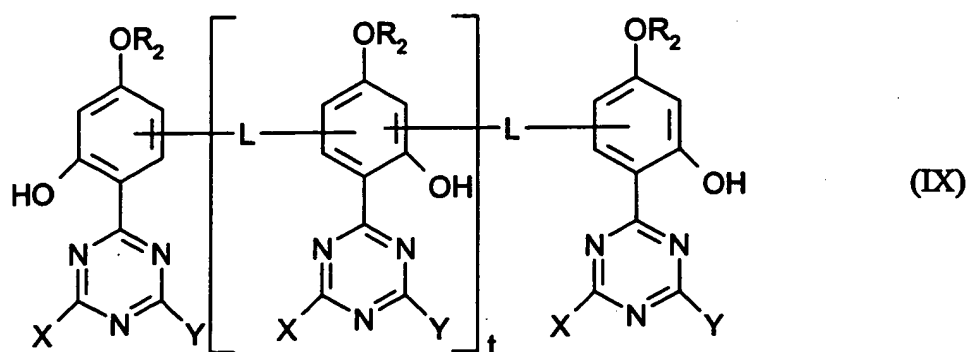
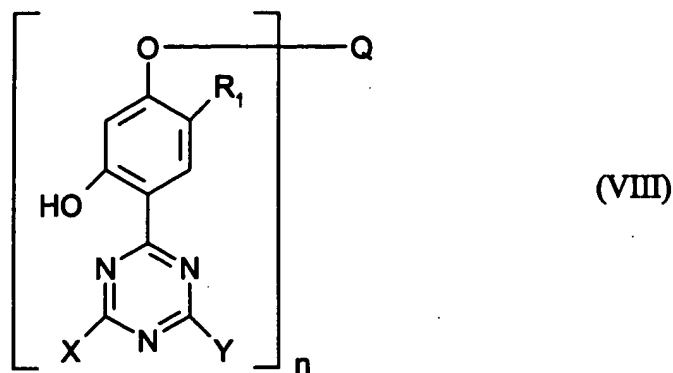
(V)



(VI)



(VII)



wherein

X and Y are independently phenyl, naphthyl, or said phenyl or said naphthyl substituted by one to three alkyl of 1 to 6 carbon atoms, by halogen, by hydroxy or by alkoxy of 1 to 6 carbon atoms or by mixtures thereof; or X and Y are independently Z₁ or Z₂;

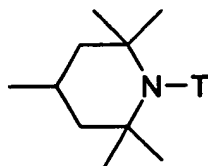
R₁ is hydrogen, straight or branched chain alkyl of 1 to 24 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, halogen, -SR₃, -SOR₃ or -SO₂R₃; or said alkyl, said cycloalkyl or said phenylalkyl substituted by one to three halogen, -R₄, -OR₅, -N(R₅)₂, -COR₅, -COOR₅, -OCOR₅, -CN, -NO₂, -SR₅, -SOR₅, -SO₂R₅ or -P(O)(OR₅)₂, morpholinyl, piperidinyl, 2,2,6,6-tetramethylpiperidinyl, piperazinyl or N-methylpiperidinyl groups or combinations thereof; or said alkyl or said cycloalkyl interrupted by one to four phenylene, -O-, -NR₅-, -CONR₅-, -COO-, -OCO- or -CO groups or combinations thereof; or said

alkyl or said cycloalkyl both substituted and interrupted by combinations of the groups mentioned above;

R_3 is alkyl of 1 to 20 carbon atoms, alkenyl of 3 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, aryl of 6 to 10 carbon atoms or said aryl substituted by one or two alkyl of 1 to 4 carbon atoms;

R_4 is aryl of 6 to 10 carbon atoms or said aryl substituted by one to three halogen, alkyl of 1 to 8 carbon atoms, alkoxy of 1 to 8 carbon atoms or combinations thereof; cycloalkyl of 5 to 12 carbon atoms; phenylalkyl of 7 to 15 carbon atoms or said phenylalkyl substituted on the phenyl ring by one to three halogen, alkyl of 1 to 8 carbon atoms, alkoxy of 1 to 8 carbon atoms or combinations thereof; or straight or branched chain alkenyl of 2 to 18 carbon atoms;

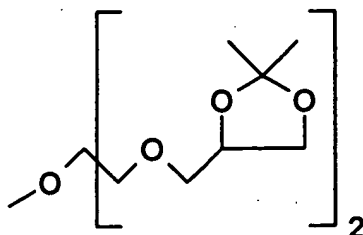
R_5 is defined as is R_4 ; or R_5 is also hydrogen or straight or branched chain alkyl of 1 to 24 carbon atoms, alkenyl of 2 to 24 carbon atoms; or R_5 is a group for formula



T is hydrogen, oxyl, hydroxyl, $-OT_1$, alkyl of 1 to 24 carbon atoms, said alkyl substituted by one to three hydroxy; benzyl or alkanoyl of 2 to 18 carbon atoms;

T_1 is alkyl of 1 to 24 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, alkenyl of 2 to 24 carbon atoms, cycloalkenyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, a radical of a saturated or unsaturated bicyclic or tricyclic hydrocarbon of 7 to 12 carbon atoms or aryl of 6 to 10 carbon atoms or said aryl substituted by one to three alkyl of 1 to 4 carbon atoms;

R_2 is hydrogen, straight or branched chain alkyl of 1 to 24 carbon atoms or cycloalkyl of 5 to 12 carbon atoms; or said alkyl or said cycloalkyl substitute by one to four halogen, epoxy, glycidyoxy, furyloxy, $-R_4$, $-OR_5$, $-N(R_5)_2$, $-CON(R_5)_2$, $-COR_5$, $-COOR_5$, $-OCOR_5$, $-OCOC(R_5)=C(R_5)_2$, $-C(R_5)=CCOOR_5$, $-CN$, $-NCO$, or

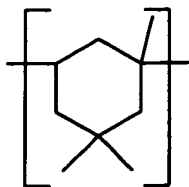


or combinations thereof; or said alkyl or said cycloalkyl interrupted by one to four epoxy, -O-, -NR₅-, -CONR₅-, -COO-, -OCO-, -CO-, -C(R₅)=C(R₅)COO-, -OCOC(R₅)=C(R₅)-, -C(R₅)=C(R₅)-, phenylene or phenylene-G-phenylene in which G is -O-, -S-, -SO₂-, -CH₂- or -C(CH₃)₂- or combinations thereof, or said alkyl or said cycloalkyl both substituted and interrupted by combinations of the groups mentioned above; or R₂ is -SO₂R₃ or -COR₆;

R_6 is straight or branched chain alkyl of 1 to 18 carbon atoms, straight or branched chain alkenyl of 2 to 12 carbon atoms, phenoxy, alkylamino of 1 to 12 carbon atoms, arylamino of 6 to 12 carbon atoms, $-R_7COOH$ or $-NH-R_8-NCO$;

R₇ is alkylene of 2 to 14 carbon atoms or phenylene;

R₈ is alkylene of 2 to 24 carbon atoms, phenylene, tolylene, diphenylmethane or a group



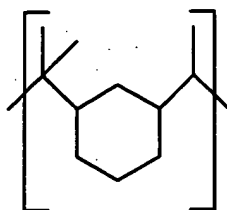
R_1' and R_1'' are the same or different and are as defined for R_1 ;

R_2' and R_2'' are the same or different and are as defined for R_2 ;

X , X' , Y and Y' are the same or different and are as defined for X and Y ;

t is 0 to 9;

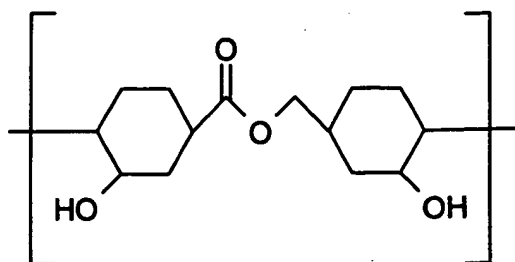
L is straight or branched alkylene of 1 to 12 carbon atoms, cycloalkylene of 5 to 12 carbon atoms or alkylene substituted or interrupted by cyclohexylene or phenylene; or L is benzylidene; or L is $-S-$, $-S-S-$, $-S-E-S-$, $-SO-$, $-SO_2-$, $-SO-E-SO-$, $-SO_2-E-SO_2-$, $-CH_2-NH-E-NH-CH_2-$ or



E is alkylene of 2 to 12 carbon atoms, cycloalkylene of 5 to 12 carbon atoms or alkylene interrupted or terminated by cycloalkylene of 5 to 12 carbon atoms;

n is 2, 3 or 4;

when n is 2; Q is straight or branched alkylene of 2 to 16 carbon atoms; or said alkylene substituted by one to three hydroxy groups; or said alkylene interrupted by one to three $-CH=CH-$ or $-O-$; or said alkylene both substituted and interrupted by combinations of the groups mentioned above; or Q is xylylene or a group $-CONH-R_8-NHCO-$, $-CH_2CH(OH)CH_2O-R_9-OCH_2CH(OH)CH_2-$, $-CO-R_{10}-CO-$, or $-(CH_2)_m-COO-R_{11}-OOC-(CH_2)_m-$, where m is 1 to 3; or Q is



R_9 is alkylene of 2 to 50 carbon atoms; or said alkylene interrupted by one to ten -O-, phenylene or a group -phenylene-G-phenylene in which G is -O-, -S-, -SO₂-, -CH₂- or -C(CH₃)₂-;

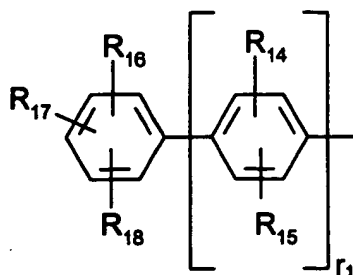
R_{10} is alkylene of 2 to 10 carbon atoms, or said alkylene interrupted by one to four -O-, -S- or -CH=CH-; or R_{10} is arylene of 6 to 12 carbon atoms;

R_{11} is alkylene of 2 to 20 carbon atoms or said alkylene interrupted by one to eight -O-;

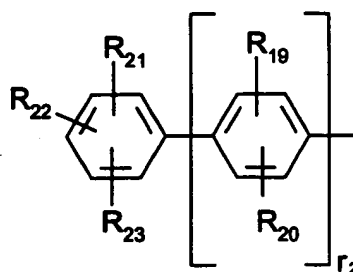
when n is 3, Q is a group $-[(CH_2)_mCOO]_3-R_{12}$ where m is 1 to 3, and R_{12} is an alkanetriyl of 3 to 12 carbon atoms;

when n is 4, Q is a group $-[(CH_2)_mCOO]_4-R_{13}$ where m is 1 to 3, and R_{14} is an alkanetetrayl of 4 to 12 carbon atoms;

Z_1 is a group of formula



Z_2 is a group of formula



where

r_1 and r_2 are independently of each other 0 or 1;

R_{14} , R_{15} , R_{16} , R_{17} , R_{18} , R_{19} , R_{20} , R_{21} , R_{22} and R_{23} are independently of one another hydrogen, hydroxy, cyano, alkyl of 1 to 20 carbon atoms, alkoxy of 1 to 20 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, cycloalkoxy of 5 to 12 carbon atoms, halogen, haloalkyl of 1 to 5 carbon atoms, sulfo, carboxy, acylamino of 2 to 12 carbon atoms, acyloxy of 2 to 12 carbon atoms, alkoxycarbonyl of 2 to 12 carbon atoms or aminocarbonyl; or R_{17} and R_{18} or R_{22} and R_{23} together with the phenyl radical to which they are attached are a cyclic radical interrupted by one to three -O- or -NR₅-;

with the proviso that the compound of formula (IV) is not 4,6-diphenyl-2-(4-hexyloxy-2-hydroxyphenyl)-s-triazine.

12. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula (IV)

where X and Y are the same or different and are phenyl or said phenyl substituted by one to three alkyl of 1 to 6 carbon atoms, halogen, hydroxy or alkoxy of 1 to 12 carbon atoms; or X and Y are Z₁ or Z₂;

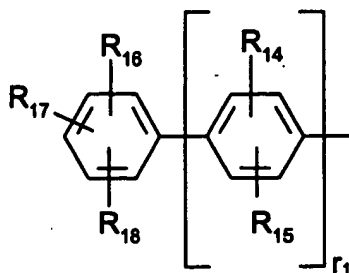
R₁ is hydrogen, straight or branched chain alkyl of 1 to 24 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms or halogen;

R₂ is hydrogen, straight or branched chain alkyl of 1 to 24 carbon atoms or cycloalkyl of 5 to 12 carbon atoms; or said alkyl or said cycloalkyl substituted by one to three -R₄, -OR₃, -COOR₃, -OCOR₃ or combinations thereof; or said alkyl or cycloalkyl interrupted by one to three epoxy, -O-, -COO-, -OCO- or -CO-;

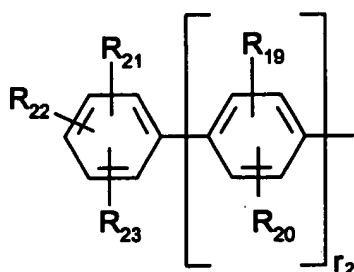
R₄ is aryl of 6 to 10 carbon atoms or said aryl substituted by one to three halogen, alkyl of 1 to 8 carbon atoms, alkoxy of 1 to 8 carbon atoms or combinations thereof; cycloalkyl of 5 to 12 carbon atoms; phenylalkyl of 7 to 15 carbon atoms or said phenylalkyl substituted on the phenyl ring by one to three halogen, alkyl of 1 to 8 carbon atoms, alkoxy of 1 to 8 carbon atoms or combinations thereof;

R₅ is defined as is R₄; or R₅ is also hydrogen or straight or branched chain alkyl of 1 to 24 carbon atoms;

Z₁ is a group of formula



Z_2 is a group of formula



where r_1 and r_2 are each 1; and

R_{14} , R_{15} , R_{16} , R_{17} , R_{18} , R_{19} , R_{20} , R_{21} , R_{22} and R_{23} are independently of one another hydrogen, hydroxy, cyano, alkyl of 1 to 20 carbon atoms, alkoxy of 1 to 20 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, cycloalkoxy of 5 to 12 carbon atoms, halogen, haloalkyl of 1 to 5 carbon atoms, sulfo, carboxy, acylamino of 2 to 12 carbon atoms, acyloxy of 2 to 12 carbon atoms, or alkoxycarbonyl of 2 to 12 carbon atoms or aminocarbonyl;

with the proviso that the compound of formula (IV) is not 4,6-diphenyl-2-(4-hexyloxy-2-hydroxyphenyl)-s-triazine.

13. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula (V)

wherein

X is phenyl, naphthyl or said phenyl or said naphthyl substituted by one to three alkyl of 1 to 6 carbon atoms, by halogen, by hydroxy or by alkoxy of 1 to 6 carbon atoms or by mixtures thereof; or X is Z₁.

14. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula (VI) or (VII) or (VIII).

15. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula (IX)

wherein

X and Y are independently phenyl or said phenyl substituted by one to three alkyl of 1 to 6 carbon atoms, by halogen, by hydroxy or by alkoxy of 1 to 6 carbon atoms or by mixtures thereof; or X and Y are independently Z₁ or Z₂; and

L is straight or branched alkylene of 1 to 12 carbon atoms, cycloalkylene of 5 to 12 carbon atoms or alkylene substituted or interrupted by cyclohexylene or phenylene.

16. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula (IV)

wherein

X and Y are the same or different and are phenyl or said phenyl substituted by one to three alkyl of 1 to 6 carbon atoms; Z₁ or Z₂;

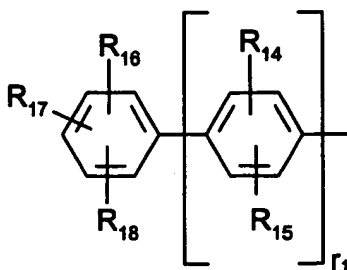
R₁ is hydrogen or phenylalkyl of 7 to 15 carbon atoms;

R₂ is hydrogen, straight or branched chain alkyl of 1 to 18 carbon atoms; or said alkyl substituted by one to three -R₄, -OR₅ or mixtures thereof; or said alkyl interrupted by one to eight -O- or -COO-;

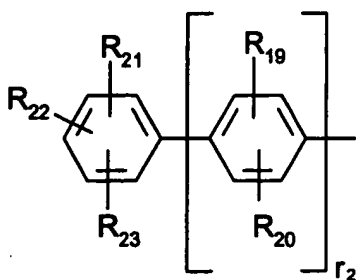
R₄ is aryl of 6 to 10 carbon atoms;

R₅ is hydrogen;

Z₁ is a group of formula



Z₂ is a group of formula



where

r_1 and r_2 are each 1; and

R_{14} , R_{15} , R_{16} , R_{17} , R_{18} , R_{19} , R_{20} , R_{21} , R_{22} and R_{23} are each hydrogen;

with the proviso that the compound of formula (IV) is not 4,6-diphenyl-2-(4-hexyloxy-2-hydroxyphenyl)-s-triazine.

17. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula

(1) 2,4-bis(4-biphenyl)-6-(2-hydroxy-4-octyloxycarbonylethylideneoxyphenyl)-s-triazine;

(2) 2-phenyl-4-[2-hydroxy-4-(3-sec-butyloxy-2-hydroxypropyloxy)phenyl]-6-[2-hydroxy-4-(3-sec-amtyloxy-2-hydroxypropyloxy)phenyl]-s-triazine;

(3) 2,4-bis(2,4-dimethylphenyl)-6-[2-hydroxy-4-(3-benzyloxy-2-hydroxypropyloxy)-phenyl]-s-triazine;

(4) 2,4-bis(2-hydroxy-4-n-butyloxyphenyl)-6-(2,4-di-n-butyloxyphenyl)-s-triazine;

(5) 2,4-bis(2,4-dimethylphenyl)-6-[2-hydroxy-4-(3-nonyloxy*-2-hydroxypropyloxy)-5- α -cumylphenyl]-s-triazine; (* denotes a mixture of octyloxy, nonyloxy and decyloxy groups)

(6) methylenebis-{2,4-bis(2,4-dimethylphenyl)-6-[2-hydroxy-4-(3-butyloxy-2-hydroxypropoxy)phenyl]-s-triazine}, methylene bridged dimer mixture bridged in the 3:5', 5:5' and 3:3' positions in a 5:4:1 ratio;

(7) 2,4,6-tris(2-hydroxy-4-isooctyloxycarbonylisopropylideneoxyphenyl)-s-triazine;

(8) 2,4-bis(2,4-dimethylphenyl)-6-(2-hydroxy-4-hexyloxy-5- α -cumylphenyl)-s-triazine;

(9) 2,4-bis(2,4-dimethylphenyl)-6-(2-hydroxy-4-octyloxyphenyl)-s-triazine;

(10) 2-(2,4,6-trimethylphenyl)-4,6-bis[2-hydroxy-4-(3-butyloxy-2-hydroxypropyloxy)-phenyl]-s-triazine; or

(11) 2,4,6-tris[2-hydroxy-4-(3-sec-butyloxy-2-hydroxypropyloxy)phenyl]-s-triazine.

18. A plastic container or film according to claim 11 wherein said tris-aryl-s-triazine UV absorbers are of the formula

(1) 2,4-bis(4-biphenyl)-6-(2-hydroxy-4-octyloxycarbonylethylideneoxyphenyl)-s-triazine;

(5) 2,4-bis(2,4-dimethylphenyl)-6-[2-hydroxy-4-(3-nonyloxy*-2-hydroxypropyloxy)-5- α -cumylphenyl]-s-triazine; (* denotes a mixture of octyloxy, nonyloxy and decyloxy groups) or

(7) 2,4,6-tris(2-hydroxy-4-isooctyloxycarbonylisopropylideneoxyphenyl)-s-triazine.

19. A plastic container or film according to claim 1 which comprises at least one hydroxyphenyl benzotriazole and at least one tris-aryl-s-triazine or a mixture of two or more hydroxyphenyl benzotriazoles or two or more tris-aryl-s-triazines.

20. A plastic container or film according to claim 1 which additionally comprises at least one UV absorber selected from the group consisting of 2-(2-hydroxy-3,5-di- α -cumyl)-2H-benzotriazole, 5-chloro-2-(2-hydroxy-3-tert-butyl-5-methylphenyl)-2H-benzotriazole, 5-chloro-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole and 4,6-diphenyl-2-(4-hexyloxy-2-hydroxyphenyl)-s-triazine.

21. A plastic container or film according to claim 1 in which said contents are selected from the group consisting of fruit juices, soft drinks, beer, wines, meats, vegetables, food products, dairy products, personal care products, cosmetics, shampoos, vitamins, pharmaceuticals, inks, dyes and pigments.

22. A plastic container or film according to claim 1 which is a rigid or flexible mono- or multi-layered packaging material

wherein each layer is comprised of one or more polymers selected from the group consisting of polyesters, polyolefins, polyolefin copolymers, ethylene-vinyl acetate, polystyrene, poly(vinyl chloride), poly(vinylidene chloride), polyamides, cellulose, polycarbonates, ethylene-vinyl alcohol, poly(vinyl alcohol), poly(vinyl alcohol) copolymers, styrene-acrylonitrile, ionomers, partially hydrolyzed poly(vinyl acetate), poly(ethylene-co-vinyl alcohol), polyvinylidene chloride, polyurethanes, PVDC and epoxies.

23. A plastic container or film according to claim 22 in which at least one layer is comprised of a polymer selected from the group consisting of poly(ethylene terephthalate), polyethylene and polypropylene.

24. A packaging material according to claim 22 wherein the UV absorbers of component (b) are incorporated into a coating applied to the outer surface of the packaging material.

25. A plastic container or film according to claim 1 in which the UV absorbers of component (b) are present from about 0.1 to about 20 % by weight based on the weight of the plastic container or film.

26. A plastic container or film according to claim 1 which additionally comprises at least one coadditive selected from the group consisting of antioxidants, other UV absorbers, hindered amines, phosphites or phosphonites, hydroxylamines, nitrones, benzofuran-2-ones, thio-synergists, polyamide stabilizers, metal stearates, nucleating agents, fillers, reinforcing agents, lubricants, emulsifiers, dyes, pigments, optical brighteners, flame retardants, antistatic agents and blowing agents.

DECLARATION AND POWER OF ATTORNEY FOR U.S. PATENT APPLICATIONS

☒ Original ☐ Supplemental ☐ Substitute ☐ PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if more than one name is listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD OF CONTENT PROTECTION WITH DURABLE UV ABSORBERS

which is described and claimed in:

- ☒ the attached specification.
- ☐ the specification in U.S. application No. _____
filed _____, and as amended on _____ (if applicable).
(month/day/year) (month/day/year)
- ☐ the specification in International Application No. PCT/ _____,
filed _____, assigned U.S. Application No. _____ (if applicable), and as amended
(month/day/year)
 - ☐ under PCT Article 19 on _____ (if applicable)
(month/day/year)
 - ☐ under PCT Article 34 on _____ (if applicable)
(month/day/year)
 - ☐ and further amended on _____ (if applicable)
(month/day/year)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information which is known by me to be material to the patentability of this application as defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119 (a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America relating to this subject matter having a filing date before that of the application on which priority is claimed:

COUNTRY/REGION (OR PCT)	APPLICATION NO.	FILING DATE (month/day/year)	PRIORITY CLAIMED	
_____	_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under 35 USC § 119(e) of any United States provisional application(s) listed below:

APPLICATION NO.	FILING DATE (month/day/year)
60/179,567	February 1, 2000
_____	_____
_____	_____

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or PCT international application(s) designating the United States listed below and, insofar as the application discloses and claims subject matter in addition to that disclosed in the prior copending application, I acknowledge the duty to disclose all information known by me to be material to patentability as defined in 37 C.F.R. § 1.56 which became available between the

filing date of the prior application and the national or PCT international filing date of this application:

U.S. APPLICATION NO.	FILING DATE (month/day/year)	STATUS
_____	_____	<input type="checkbox"/> Patented <input type="checkbox"/> Pending <input type="checkbox"/> Abandoned
_____	_____	<input type="checkbox"/> Patented <input type="checkbox"/> Pending <input type="checkbox"/> Abandoned
_____	_____	<input type="checkbox"/> Patented <input type="checkbox"/> Pending <input type="checkbox"/> Abandoned

PCT APPLICATION NO.	INTERNATIONAL FILING DATE (month/day/year)	U.S. APPLICATION NO. (if any)	STATUS
_____	_____	_____	<input type="checkbox"/> Patented
			<input type="checkbox"/> Pending
			<input type="checkbox"/> Abandoned

I hereby appoint the following attorneys and agents, associated with Customer No. 000324, each of them with full power of substitution, revocation and appointment of associates, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Luther A. R. Hall (Reg. No. 27,337), JoAnn L. Villamizar (Reg. No. 30,598), Kevin T. Mansfield (Reg. No. 31,635), David R. Crichton (Reg. No. 37,300), Michele A. Kovaleski (Reg. No. 37,865) and Tyler A. Stevenson (Reg. No. 46,388).

Address all correspondence associated with Customer No. 000324 to ***Ciba-Specialty Chemicals Corporation, Patent Department, 540 White Plains Road, P.O. Box 2005, Tarrytown, NY 10591-9005.***

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole
or first joint inventor

Stephen Mark Andrews

Inventor's signature

Stephen M Andrews

Date

01/17/2001
month/day/year

Residence

5B East Lake Road
New Fairfield, Connecticut 06812

Citizenship

United States

Post Office Address

Same as above

Full name of second
joint inventor, if any

Joseph Suhadolnik

Inventor's signature

Joseph Suhadolnik

Date

1/18/01
month/day/year

Residence

337 Hallocks Mill Road
Yorktown Heights, New York 10598

Citizenship

United States

Post Office Address

Same as above

Full name of third
joint inventor, if any

Mervin Gale Wood

Inventor's signature

Mervin Gale Wood

Date

01/17/01
month/day/year

Residence

Rural R#3 Box 366A
Beach Road
Poughquag, New York 12570

Citizenship

United States

Post Office Address

Same as above